digital codes generated by said character determination means for an unknown display on said video display terminal with said digital codes representative of each character on said predetermined display, such that said identity of each character displayed on said unknown display can be determined.

8. The system of claim 1 further comprising:

synchronization signal input means for receiving from the data processing device a horizontal synchronization signal; and

pixel clock generating means connected with said synchronization signal input means and said conversion means for generating a pixel clock signal.

9. The system of claim 1 wherein said data processing device is a personal computer, and said video raster signal input means comprises a circuit interconnected between said personal computer and the video display terminal.

10. The system of claim 2 wherein said transmission means comprises a standard public switched telephone line.

11. A method of receiving, analyzing and converting information contained in an analog video raster signal generated by a data processing device and displayed on a video display terminal associated with the data processing device, into a digital representation of that information comprising the steps of:

receiving the analog video raster signal generated by the data processing device;

converting said analog video raster signal into a digital signal representative of said information contained in said video raster signal,

said converting step including the steps of:

determining an identity of each character displayed on the video display terminal; and

generating a digital code indicative of said identity of said each character displayed on the video display terminal,

wherein said step of generating a digital code comprises the step of generating a series of cyclic redundancy checks from pixel information associated with each character location on the video display terminal.

12. The method of claim 11 further comprising the step of transmitting said digital codes to a remote location.

13. The method of claim 12 further comprising the steps of:

receiving said digital codes transmitted to said remote location; and

displaying said digital codes to create an image substantially the same as that shown on the video display terminal to allow a user to determine an operational status of the data processing device.

14. The method of claim 13 wherein said step of transmitting said digital codes to said remote location is performed in response to a command received from said remote location requesting that said digital codes be transmitted.

15. The method of claim 12 wherein said digital codes are transmitted to said remote location using a standard public switched telephone line.

16. The method of claim 11 further comprising the steps of:

analyzing a predetermined character sequence displayed on the video display terminal to determine an identity of each character displayed on said video display terminal;

generating a digital code representative of each character in said predetermined character sequence displayed on said video display terminal; and

storing said digital codes in a memory.

17. The method of claim 11 further comprising the steps of:

receiving a horizontal synchronization signal from the data processing device; and

generating a pixel dock signal in synchronization with said horizontal synchronization signal.

18. The method of claim 11 wherein said data processing device is a personal computer, and said video raster signal is intercepted between said personal computer and the video display terminal.

19. A computer implemented method of converting information contained in a video raster signal generated by a data processing device and displayed on a video display terminal associated with the data processing device, into a digital representation of that information comprising the computer implemented steps of:

receiving the video raster signal generated by the data processing device; and

converting said video raster signal into a digital signal representative of said information contained in said video raster signal,

said converting step including the steps of:

determining an identity of each character displayed on the video display terminal; and

generating a digital code indicative of said identity of said each character displayed on the video display terminal,

wherein said step of generating a digital code comprises the step of generating a series of cyclic redundancy checks from pixel information associated with each character location on the video display terminal.

20. A computer monitoring system for monitoring information contained in an analog video raster signal generated by a data processing device and displayed on a video display terminal connected to the data processing device and for convening the information contained in the analog video raster signal into a digital representation of that information for transmission to a remote location comprising:

analog video raster signal input means connected with the data processing device for receiving said analog video raster signal generated by said data processing device;

conversion means connected to said analog video raster signal input means for receiving said analog video raster signal and for converting said analog video raster signal into a digital signal comprising a plurality of digital codes representative of information contained in said analog video raster signal, said conversion means comprising processing means for analyzing said analog video raster signal, for determining an identity of each character displayed on the video display terminal, and for generating at least one of said plurality of digital codes, said at least one of said plurality of digital codes being indicative of said identity of said each character displayed on the video display terminal.

21. A computer monitoring system for monitoring information contained in an analog video raster signal generated by a data processing device and displayed on a video display terminal connected to the data processing device and for converting the information contained in the analog video raster signal into a digital representation of that information for transmission to a remote location comprising:

analog video raster signal input means connected with the data processing device for receiving said analog video raster signal generated by said data processing device;

conversion means connected to said analog video raster signal input means for receiving said analog video raster signal and for converting said analog video raster signal into a digital signal comprising a plurality of digital codes representative of information contained in said analog video raster signal, said conversion means comprising processing means for analyzing said analog video raster signal, character determination means for determining an identity of each character displayed on the video display terminal and for generating a digital code indicative of said identity of said each character displayed on the video display terminal and for generating at least one of said plurality of digital codes, said

at least one of said plurality of digital codes being indicative of said identity of said each character displayed on the video display terminal; and

training means connected to said character determination means for generating a predetermined character display, for operating said character determination means to generate digital codes representative of an identity of each character in said predetermined character display, and for storing said digital codes generated by said character determination means.

22-122. (Canceled).

123. (Twice Amended) A computer monitoring system comprising:

plural host computer sites, each host computer site having at least one host computer, the at least one host computer including a host processor, a host input device, and a host display device;

a remote processor situated at a remote site, the remote processor having a remote display device and a remote input device connected thereto;

a network linking the remote site and each of the plural host computer sites, the network facilitating a first connection between a first selected host computer at a first host computer site and the remote site, and during the first connection either:

(a) transmitting screen data from the host display device of the first selected host computer to the remote display device, or

(b) transmitting input signals from the remote input device to the first selected host computer for controlling the first selected host computer;

an on-screen display process, execution of the on-screen display process at the remote site providing a pop-up screen on the remote display device, the pop-up comprising a menu identifying the host computers at the plural host computer sites, the pop-up screen at least overlaying the video appearing on the remote display device as a result of the first connection; whereupon operation of the remote input device in response to the menu of the pop-up screen causes the remote site to terminate the first connection and to establish a second connection between a second selected host computer and the remote site.

124. (Previously presented) The apparatus of claim 123, wherein the second selected host computer is situated at a second host computer site.

125. (Previously presented) The apparatus of claim 123, wherein at least one of the plural host computer sites comprises a network of host computers.

126. (Previously presented) The apparatus of claim 125, wherein at least one of the plural host computer sites comprises a daisy chained configuration of host computers.

127. (Previously presented) The apparatus of claim 125, wherein at least one of the plural host computer sites comprises a daisy chained configuration of host computers, the daisy chain configuration including a host unit associated with each of the host computers, wherein for each of the host computers the host unit is connected between the host computer and a source of power for the host computer, and wherein upon receipt of the cold boot command from the remote site the host unit temporarily interrupts power to the host processor of the host computer.

128. (Previously presented) The apparatus of claim 125, wherein at least one of the plural host computer sites comprises a daisy chained configuration of host computers, the daisy chain configuration including a host unit associated with each of the host computers, wherein for at least one of the host computers the host unit is connected between the host processor and at least one of the host input device and the host display device of the at least one of the host computers.

129-135. (Canceled).

136. (Previously presented) A system for interfacing digitized keyboard signals with a computer processor generating analog video signals, comprising:

a remote access facility;

a non-dedicated serial channel; and

a computer access interface receiving from the remote access facility via the non-dedicated serial channel the digitized keyboard signals and transmitting to the remote access facility via the non-dedicated serial channel a digitized version of the analog video signals, wherein the non-dedicated serial channel is between the remote access facility and the computer access interface.

137. (Previously presented) The system of claim 136, wherein the channel includes a network.

138. (Previously presented) The system of claim 136, wherein the channel includes a wireline.

139. (Previously presented) The system of claim 136, wherein the channel includes a modem-to-modem communication channel.

140. (Previously presented) The system of claim 136, wherein the computer processor includes a computer keyboard port and a computer video device port, the computer access interface including a dedicated link to the keyboard port for transmitting the keyboard signals to the computer processor and including another dedicated link to the video device port for receiving the analog video signals from the computer processor.

141-143. (Canceled).

144. (Previously presented) The system of claim 136, wherein the computer access interface further receives computer keyboard commands from the computer processor and transmits the keyboard commands on the non-dedicated serial channel to the remote access facility.

145. (Previously presented) The system of claim 136, wherein the computer access interface further receives computer mouse commands from the computer processor and transmits the mouse commands on the non-dedicated serial channel to the remote access facility.

146. (Previously presented) The system of claim 136, wherein the computer access interface determines changes in the analog video signals and produces the digitized version of the analog video signals in accordance with the changes.

147. (Previously presented) The system of claim 136, wherein the computer access interface analyzes characteristics of the analog video signals and produces the digitized version of the analog video signals in accordance with results of said analysis of the analog video signal characteristics.

148. (Previously presented) The system of claim 147, wherein the analog video signals include RGB information including RGB components and wherein the computer access interface produces the digitized version of the analog video signals by applying a digitization process to each RGB component of the RGB information.

149. (Previously presented) The system of claim 148, wherein the digitization process includes analyzing phase characteristics of each RGB component.

150. (Previously presented) The system of claim 148, wherein the digitization process includes analyzing amplitude characteristics of each RGB component.

151. (Previously presented) The system of claim 136, wherein the computer access interface includes hardware defining at least a local video port and wherein the computer access interface supports a video pass-thru mode for continuously applying the video signal to the local video port of the computer access interface.

152. (Previously presented) The system of claim 136, wherein the computer processor receives AC power and the computer access interface receives a request to break the AC power and then coordinates a break in the AC power to the computer processor.

153. (Previously presented) The system of claim 152, further including a power break component receiving the AC power and delivering the AC power to the computer processor, wherein the computer access interface delivers a power break command signal to the power break component upon receipt of the request to break.

154. (Previously presented) The system of claim 136, wherein the computer access interface includes a page alert process generating an outgoing phone call to a predefined page number whenever a remote access user of the remote access facility fails to enter an appropriate access code.

155. (Previously presented) The system of claim 136, wherein the computer access interface generates a predefined audio signal whenever a remote access user establishes communication with the computer access interface via the remote access facility.

156. (Previously presented) The system of claim 136, wherein the computer access interface generates a predefined visual signal whenever a remote access user establishes communication with the computer access interface via the remote access facility.

157. (Previously presented) A system for monitoring a host computer from a remote processor the host computer including a host processor and a host display device port and the remote processor including a remote display device comprising:

a host unit connected between the remote processor and the host computer which (1) causes screen data output on the host display device port to appear also on the remote display device whereby at least a situation requiring a reset operation appears at the host

unit and (2) upon receipt of a reset command, causes the host unit to initiate a reset operation of the host computer.

158. (Previously presented) The system of claim 157, wherein the host unit also automatically causes a reset operation whenever a connection between the remote processor and the host unit is terminated.

159. (Previously presented) The system of claim 157, wherein the host unit receives communications from the remote processor via a telephone carrier signal and the host unit includes a carrier detect circuit and automatically causes the reset operation upon a determination made by the carrier detect circuit of the absence or presence of the carrier signal.

160. (Previously presented) A method of monitoring a computer system comprising:

providing a host unit between a host computer and a remote processor; the host computer including a host processor and a host display device port, the remote processor including a remote display device;

using the host unit to cause screen data output on the host display device port to appear also on the remote display device whereby at least a situation requiring a reset operation appears at the host unit; and

receiving a reset command at the host unit and thereupon causing the host unit to initiate a reset operation of the host computer.

161. (Previously presented) The method of claim 160, wherein the host unit also automatically causes a reset operation whenever a connection between the remote processor and the host unit is terminated.

162. (Previously presented) The method of claim 161, further including the steps of receiving communications from the remote processor at the host unit via a telephone carrier

signal and wherein the host unit includes a carrier detect circuit and automatically causes the reset operation upon a determination made by the carrier detect circuit of the absence or presence of the carrier signal.

163-164. (Canceled).

165. (Previously Presented) A system, comprising:

a user station, comprising:

an analog video source generating analog video signals;

an analog video port exhibiting the analog video signals;

a video display connected to the video port to retrieve from the port the analog video signals and to display the retrieved analog video signals;

a video processor to receive, digitize and packetize the analog video signals into packeted digital video signals;

a network connector to establish a logical digital data path from the user station to a remote station and to deliver the packeted digital video signals onto the established logical digital data path;

a keyboard port for keyboard signals, the network connector also delivering keyboard signals from the remote station to the keyboard port via the established logical digital data path;

a mouse port for mouse signals, the network connector also delivering mouse signals from the remote station to the mouse port via the established logical digital data path; and

a processor to retrieve the keyboard and mouse signals from the remote station and to instruct the analog video source to generate new analog video signals based on the retrieved keyboard and mouse signals.

166. (Previously presented) A user station as in claim 165 wherein the network connector includes a modem.

167. (Previously presented) A user station as in claim 165 wherein the network connector includes a router to read addresses on the packeted digital video signals and route the packeted digital video signals along the established logical digital data path based on the addresses.

168. (Previously presented) The system according to claim 165, further comprising:

a plurality of user stations;

the system further comprising:

a remote computer, having:

a data entry device port to receive entry device data entered from a standard keyboard or mouse; and

a video processor to receive, de-digitize and de-packetize the packeted digital video signals back into the analog video signals.

169. (Previously Presented) A system for controlling a target computer from a remote workstation of the type that includes a keyboard, a mouse, and a monitor, comprising:

a host processor and associated video memory and keyboard/mouse buffers;

a video digitizer coupled to the host processor that receives analog video signals from the target computer, samples the video signals, and stores the video signals in the video memory;

a keyboard/mouse interface that receives keyboard and mouse signals from the remote workstation and stores them in the keyboard/mouse buffers; and

the host processor operating a remote access and control program that transmits the contents of the video memory to the remote workstation and receives the contents of the keyboard/mouse buffers from the remote workstation, both over a communication link.

170. (Previously Presented) The system of claim 169, wherein the contents of the keyboard/mouse buffers are forwarded to a keyboard and mouse input on the target computer.

171. (Canceled).

172. (Previously presented) The system of claim 169, wherein the communication link is a telephone line.

173. (Previously presented) The system of claim 169, wherein the communication link is a logical data path.

174. (Previously presented) The system of claim 169, wherein the communication link is a network.

175. (Previously presented) The system of claim 169, wherein the video digitizer includes a phase lock loop that produces a clocking signal having a frequency substantially equal to the time at which pixel values are transmitted in the video signal and a gating counter that passes the clocking signal to an analog to digital converter that samples the video signal during an active video portion of the video signal.

176. (Previously presented) The system of claim 169, wherein the video digitizer alternatively samples a single color video signal in a frame of video data and stores the samples in the video memory.

177. (Previously presented) A video digitizer for receiving analog video signals at a plurality of resolutions and for storing the video signals in a video memory of a host computer comprising:

a synchronize detect circuit that detects vertical and horizontal synchronize signals from an analog video signal;

a microprocessor that determines a clocking rate at which the analog video signal should be sampled from the timing of the vertical and horizontal synchronize signals;

a clock signal generator that produces a clock signal at the clocking rate;

an analog to digital converter that is controlled by the clock signal to sample the analog video signal, and

a bus interface circuit that writes the samples of the analog video signal into the video memory of the host computer.

178. (Previously presented) The video digitizer of claim 177, wherein the clock signal generator comprises:

a phase lock loop circuit that compares the phase of the horizontal synchronize signal with the phase of a divided clocking signal;

a variable oscillator that produces the clocking signal that controls the analog to digital converter, wherein the clocking signal has a frequency that is dependent on the difference in phase between the horizontal synchronize signal and the divided clocking signal; and

a programmable divider that receives the clocking signal produced by the variable oscillator and produces the divided clocking signal that is fed to the phase lock loop circuit.

179. (Previously presented) The video digitizer of claim 178, further comprising a gating circuit that receives the clocking signal and passes the clocking signal to the analog to digital converter during an active video portion of the analog video portion of the analog video signal.

180. (Previously presented) The video digitizer of claim 178, further comprising a phase adjust circuit that adjusts the phase of the clocking signal.

181. (Previously presented) The video digitizer of claim 177, further comprising a selection circuit that alternatively selects a red, green, and blue component on the analog video signal to be sampled by the analog to digital converter.

182. (Previously presented) The video digitizer of claim 177, wherein the analog to digital converter includes separate analog to digital converters to sample the red, green, and blue components of the analog video signal.

183. (Previously presented) The video digitizer of claim 177, wherein the host computer operates a remote access and control program that transmits the contents of the video memory to a remote computer system.

184-185. (Canceled).

186. (Previously Presented) A system for interfacing keyboard signals with a selected computer processor generating video signals, comprising:

an on-screen display generator to create a menu for a monitor associated with the keyboard signals, said menu listing the selected computer processor among a plurality of other computer processors for selection by a user of the monitor;

a network access device to interface with a network including the plurality of computer processors and the selected computer processor;

a video interface to receive information indicative of the video signals from the network via the network access device;

a keyboard interface to read the keyboard signals and to deliver the keyboard signals to the selected computer processor via the network and the network access device.

187. (Previously presented) A system according to claim 186, also for interfacing mouse signals with the selected computer processor, further comprising:

a mouse interface to read the mouse signals and to deliver the mouse signals to the selected computer processor via from the network and the network access device.

188. (Previously presented) A system according to claim 186, wherein:

the keyboard interface communicates with the selected computer processor through a keyboard port of the selected computer processor.

189. (Previously presented) A system according to claim 187, wherein:

the mouse interface communicates with the selected computer processor through a mouse port of the selected computer processor.

190-192. (Canceled).

193. (Previously Presented) A system, comprising:

a hardware host unit coupled to a host computer different from the hardware host unit; and

a remote computer software utility, located at a remote site computer, comprising:

a connection utility to establish a communication session with the host unit over a communication link; and

a pop up menu utility providing at least a user choice at the remote site computer to obtain access to the host computer via the connection utility.

194. (Amended) A computer monitoring system for monitoring the information displayed on a video display terminal connected to, and receiving display information from, a data processing device, the computer monitoring system comprising:

a microprocessor controlled computer hardware device working even if the data processing device is locked up and no longer processing data or input commands, wherein the microprocessor controlled computer hardware device includes a video raster signal input circuit for receiving a video raster signal representative of the information displayed on the video display terminal from the data processing device and a converter communicating with the video raster signal input circuit to convert the video raster signal into a digital signal representative of the information contained in the video raster signal.

195. (Previously presented) The system according to claim 194, wherein said converter comprises a character determiner for determining the identity of each character displayed on the video display terminal and for generating a digital code indicative of the identity of said each character displayed on the video display terminal, and

wherein said character determiner comprises circuitry for generating a series of cyclic redundancy checks, wherein each said cyclic redundancy check is generated from the pixel information associated with each character location on the video display terminal.

196. (Previously presented) The system according to claim 195, further comprising a transmitter coupled to said converter for transmitting said digital code to a remote location.

197. (Previously presented) The system according to claim 196, further comprising:

a receiver at said remote location coupled to said transmitter for receiving said digital codes transmitted by said transmitter; and

a remote video display coupled to said receiver for displaying said digital codes received from said receiver, said display showing an image sufficiently similar to that shown on the video display terminal to allow a user to determine the operational status of the data processing device.

198. (Previously Presented) The system according to claim 195, wherein said digital codes are transmitted to a remote location in response to a command received from said remote location requesting that said digital codes be transmitted.

199. (Previously presented) The system according to claim 195, further comprising a network for interconnecting a plurality of said microprocessor controlled computer hardware devices with one another and for allowing a user at said remote location to selectively access any one of said microprocessor controlled computer hardware devices or its associated data processing device.

200. (Previously presented) The system according to claim 195, further comprising:

a memory connected with said converter for storing said digital codes to retain an image of the information displayed on the video display terminal; and

a controller coupled to said memory and said converter for monitoring changes to said image and for storing said digital codes representative of said changes in said memory, whereby said memory contains a series of image frames that can be used by an operator to determine the cause of a system failure.

201. (Previously presented) The system according to claim 195, further comprising:

a trainer coupled to said character determiner for generating a predetermined character display and for storing said digital codes generated by said character determiner representative of each character on said predetermined display; and

a comparator communicating with said trainer and said character determiner for comparing said digital codes generated for an unknown display on said video display terminal with said digital codes representative of each character on said predetermined display, whereby the identity of each character displayed on said unknown display can be determined.

202. (Previously presented) The system according to claim 195, further comprising a synchronization signal input circuit for receiving from the data processing device a horizontal synchronization signal, and a pixel clock generator connected with said synchronization signal input circuit and said converter for generating a pixel clock signal,

wherein said data processing device is a personal computer, and said video raster signal input circuit comprises a circuit interconnected between said personal computer and the video display terminal.

203. (Previously presented) The system according to claim 195, wherein the data processing device is a personal computer, wherein the video raster signal input circuit is coupled to said personal computer for receiving a video raster signal and a horizontal synchronization signal from said personal computer, and wherein the system further comprises:

a video signal output circuit coupled to said video display terminal and said video signal input circuit for supplying said video raster signal and said horizontal synchronization signal to said video display terminal;

a host site command input circuit located with said personal computer for receiving commands from a host site user to be processed by said personal computer;

a command output circuit coupled to said local command input circuit and with a standard keyboard interface of said personal computer for supplying commands to be processed by said personal computer to said standard keyboard interface of said personal computer;

a transmitter coupled to said converter and said command output circuit for transmitting said digital signal to a remote location and for transmitting commands received from said remote location to said command output circuit;

a remote command input circuit at said remote location coupled to said transmitter for receiving commands to be transmitted to and executed by said personal computer; and

a remote video display for receiving said digital signals representative of the information contained in said video raster signal and for displaying said signals to allow a user at said remote location to view the information displayed on said video display terminal coupled to said personal computer,

wherein the converter comprises a pixel clock generator for generating a pixel clock signal;

whereby computer service personnel at the remote location can determine the present operating status of the file server, determine repair action to be taken if necessary, and initiate said repair action by transmitting commands to be executed by said personal computer to said personal computer.

204. (Previously presented) A method of converting the information contained in a video raster signal generated by a data processing device and displayed on a video display

terminal associated with the data processing device, into a digital representation of that information for monitoring the information, the method comprising:

receiving the video raster signal; and

converting the video raster signal into a digital signal representative of the information contained in the video raster signal independently from the data processing device.

205. (Previously presented) The method according to claim 204, wherein said converting step includes the steps of determining the identity of each character displayed on the video display terminal and generating a digital code indicative of the identity of said each character displayed on the video display terminal, wherein said step of generating a digital code comprises the step of generating a series of cyclic redundancy checks from the pixel information associated with each character location on the video display terminal.

206. (Previously presented) The method according to claim 205, further comprising the step of transmitting said digital codes to a remote location.

207. (Previously presented) The method according to claim 206, further comprising the steps of:

receiving said digital codes transmitted to said remote location; and

displaying said digital codes received from said remote location to create an image sufficiently similar to that shown on the video display terminal to allow a user to determine the operational status of the data processing device.

208. (Previously presented) The method according to claim 205, wherein said step of transmitting said digital codes to said remote location is performed in response to a command received from said remote location requesting that said digital codes be transmitted.

209. (Previously presented) The method according to claim 205, further comprising the steps of:

analyzing a predetermined character sequence displayed on the video display terminal to determine the identity of each character displayed on said video display terminal;

generating a digital code representative of each character in said character sequence displayed on said video display terminal; and

storing said digital codes in a memory, whereby future unknown screen displays can be compared with said digital codes to determine the identity of characters displayed on said future unknown screen displays.

210. (Previously presented) The method according to claim 204, further comprising the steps of:

receiving a horizontal synchronization signal from the data processing device; and

generating a pixel clock signal in synchronization with said horizontal synchronization signal, wherein said data processing device is a personal computer, and said video raster signal in intercepted between said personal computer and the video display terminal.

211. (Previously Presented) A circuit module for a computer having in operation therein a remote access engine to communicate between a host server and a remote workstation, comprising:

a main CPU to coordinate a analog to digital conversion of host video signals from the host server;

a field programmable gate array, in communication with the main CPU;

a video interface circuit, in communication with the field programmable gate array, to capture the host video signals for the main CPU and field programmable gate array;

a video RAM to store host video signals digitized by the main CPU and field programmable gate array, and to deliver the digitized video signals to the remote access engine for delivery to the remote computer, the video RAM in communication with the field programmable gate array to receive at least video sync processing from the field programmable gate array;

at least one of a mouse driver circuit and a keyboard driver circuit, in communication with the main CPU, to receive, respectively, mouse and keyboard information from the remote computer;

a bus controller, in communication with the field programmable gate array, to communicate information identifying the digitized host video signals and the mouse and keyboard information to the remote access engine.

212. (Twice Amended) A remote access system communicating with a digital network transmission medium to communicate user input signals from a remote computer to a host computer via the transmission medium and video signals from the host computer to the remote computer via the transmission medium, the remote access system comprising:

a user input process to capture the user input signals for digital transmission to the host computer;

a video process to capture the video signals, digitize them and format them for transmission to the remote computer, even when the host computer has locked up to no longer accept any user input signals;

a standard remote access engine:

to communicate the user input signals on the transmission medium between the host and remote computers, and

to communicate the video signals, in digital format, on the transmission medium between the host and remote computers, even when the host computer has locked up to no longer accept any user input signals.

213. (Previously presented) A circuit module for a computer having in operation therein a remote access engine to communicate between a host server and a remote workstation, including:

video buffer circuits to receive, respectively, red, green and blue analog video signals from the host server;

sync polarity circuits to receive, respectively, horizontal and vertical sync signals from the host server;

analog to digital converters communicating with the video buffer circuits to receive the red, green and blue analog video signals and convert them to digital video signals;

a phase locked loop video dot clock circuit communicating with the sync polarity circuits and outputting a dot clock signal;

a TTL converter receiving the digital video signals and converting them to a TTL format; and

a video processing circuit, including a cpu and a programmable gate array, connected to the sync polarity circuits, the phase locked loop video dot clock circuit, and the TTL converter to automatically determine a graphics mode of the red, green and blue analog video signals.

214. (Previously presented) A circuit module according to claim 213, wherein the programmable gate array includes circuitry to determine a video frame rate characteristic of the red, green and blue analog video signals.

215. (Previously presented) A circuit module according to claim 213, wherein the graphics mode includes a number of available colors.

216. (Previously presented) A circuit module according to claim 213, wherein the graphics mode includes a screen resolution in horizontal pixels per screen by vertical pixels per screen.

217. (Previously presented) A circuit module according to claim 213, wherein the graphics mode includes a table characterizing a number of available colors versus a screen resolution in horizontal pixels per screen by vertical pixels per screen.

218. (Previously presented) A circuit module according to claim 213, wherein the video processing circuit includes memory to store a set of predefined video graphics mode characteristics, and wherein the video processing circuit further divides the red, green and blue analog video signals into one or more video screen segment parts and compares the video screen segment parts to the stored predefined video graphics mode characteristics.

219. (Previously presented) A circuit module according to claim 218, wherein the video processing circuit includes a video checksum manager for storing and managing checksums associated with each video screen segment part.

220. (Previously Presented) A computer having a virtual path communication link with a remote computer over a network medium, comprising:

a remote access engine;

a data bus;

a set of circuit modules in communication with a set of corresponding host computers to receive analog video signals from the corresponding host computers, to digitize the analog video signals, to synchronize the video signals to a video display characteristic of the remote computer, and to present the digitized and synchronized video signals to the data bus;

a communication port establishing a network connection via the network medium for the remote access engine and a selected one of said set of circuit modules to receive the digitized and synchronized video signals and to deliver the selected digitized video signals to the remote computer for display.

221. (Previously Presented) A computer according to claim 220, wherein:

each circuit module includes:

a main CPU to coordinate a analog to digital conversion of host video signals from a corresponding host computer;

a field programmable gate array, in communication with the main CPU;

a video interface circuit, in communication with the field programmable gate array, to capture the host video signals for the main CPU and field programmable gate array;

a video RAM to store host video signals digitized by the main CPU and field programmable gate array, and to deliver the digitized video signals to the remote access engine for delivery to the remote computer, the video RAM in communication with the field programmable gate array to receive at least video sync processing from the field programmable gate array;

at least one of a mouse driver circuit and a keyboard driver circuit, in communication with the main CPU, to receive, respectively, mouse and keyboard information from the remote computer;

a bus controller, in communication with the field programmable gate array, to communicate information identifying the digitized host video signals and the mouse and keyboard information to the remote access engine.

222-225. (Canceled)

226. (Amended) A remote access device to remotely control a host computer and to receive at a remote location a video signal from the host computer, comprising:

a remote access engine between the host computer and the remote location to coordinate delivery of data packets along a telecommunications link between the host computer and the remote location; and

a remote access controller, including a remote access control card communicating with the telecommunications link, to read a present caller ID associated with the remote location, to store a list of predefined caller IDs, to compare the present caller ID with the list and to disable the remote access engine whenever the present caller ID fails to match any from the list of predefined caller IDs; and

an external modem and a control module providing AC power to the host computer, the external modem communicating with the control module and automatically answering calls received by the external modem on a different telecommunications link, said control module temporarily interrupting power to the host computer whenever said external modem automatically answers a call.

227-238. (Canceled)

239. (Previously presented) A circuit for communicating RGB video information from a Host computer to a remote computer via a network link, comprising:

video input circuitry to receive the RGB video information from the Host computer;

video processing circuitry to digitize the RGB video information and to decode a video format of the RGB video information received by the video input circuitry; and

a flash palette converter circuit, including:

an address mux receiving the digitized RGB video information as a stream of digital RGB pixel data;

a flash palette converter RAM being addressed by the stream of digital RGB pixel data and outputting for each RGB pixel a palette index byte corresponding to a color value of said RGB pixel.

240. (Previously presented) A circuit according to claim 239, further including a pixel assembly circuit to condense a number of palette index bytes into a single assembled pixel byte for storage, including:

a logic array receiving the video format of the RGB video information from the video processing circuitry and receiving the palette index byte from the flash palette converter circuit; and

a set of flip-flops controlled by the logic array to assemble the number of palette index bytes as a function of a characteristic of the video format of the RGB video information.

241. (Previously presented) A remote access PC to facilitate communications between a host computer and a remote computer distantly located relative to each other, comprising:

a remote access process to establish a logical data path between the host computer and the remote computer;

a control module having an AC power input to receive AC power from an external power source, an AC power output to deliver the AC power from the external power source to the host computer, a switch therebetween, and a control data input to receive a reboot signal and thereupon interrupt AC power to the host computer by operation of the switch;

a communication circuit establishing a different logical data path between the remote computer and the communication circuit, the communication circuit delivering the reboot signal to the control module when commanded to do so by the remote computer via the different logical data path.

242. (Previously presented) A remote access PC according to claim 241, wherein the communication circuit is a modem.

243. (Previously presented) A remote access device for communicating real time video signals from a host PC to a remote PC and for communicating mouse signals entered in response to the real time video signals from the remote PC to the host PC, comprising:

a video process to capture and digitize the video signals from the host PC including video signals indicating a position of a mouse pointer on a monitor associated with the host PC, the position of said mouse pointer identified by the video process being delayed by a period associated with the capturing and digitizing steps;

a mouse synchronizer to capture a current mouse position of the mouse pointer on the monitor associated with the remote PC;

a video application to communicate the current mouse position of the mouse pointer on the monitor associated with the remote PC to the host PC whereupon the host

PC jumps the host mouse pointer to a position coincident with the current mouse position.

244. (Previously presented) A remote access device according to claim 243, wherein the current mouse position is communicated from the remote computer to the mouse synchronizer in the form of current X/Y coordinates of the remote computer mouse pointer.

245. (Previously presented) A remote access device according to claim 243, wherein the mouse synchronizer captures the current mouse position of the mouse pointer on the monitor associated with the remote PC whenever a remote user clicks a mouse button.

246. (Previously presented) A remote access interface between a remote workstation having an associated remote monitor and a host device having an associated host monitor, comprising:

a host mouse;

a video capture circuit to intercept analog video signals from the host device and applying the analog video signals to the host monitor such that the host monitor displays a host pointer associated with the host mouse;

a mouse capture circuit to capture remote mouse signals from the remote workstation over a telecommunication path and to transmit the remote mouse signals to the host device for further processing as though the remote mouse signals were received from the host mouse;

a mouse adjustment process to cause the host pointer on the host monitor to jump to a position determined by the remote mouse signals.